

# Sudan

- Plagued by internal conflict
- Conflict in Darfur region responsible for tens of thousands of deaths and nearly

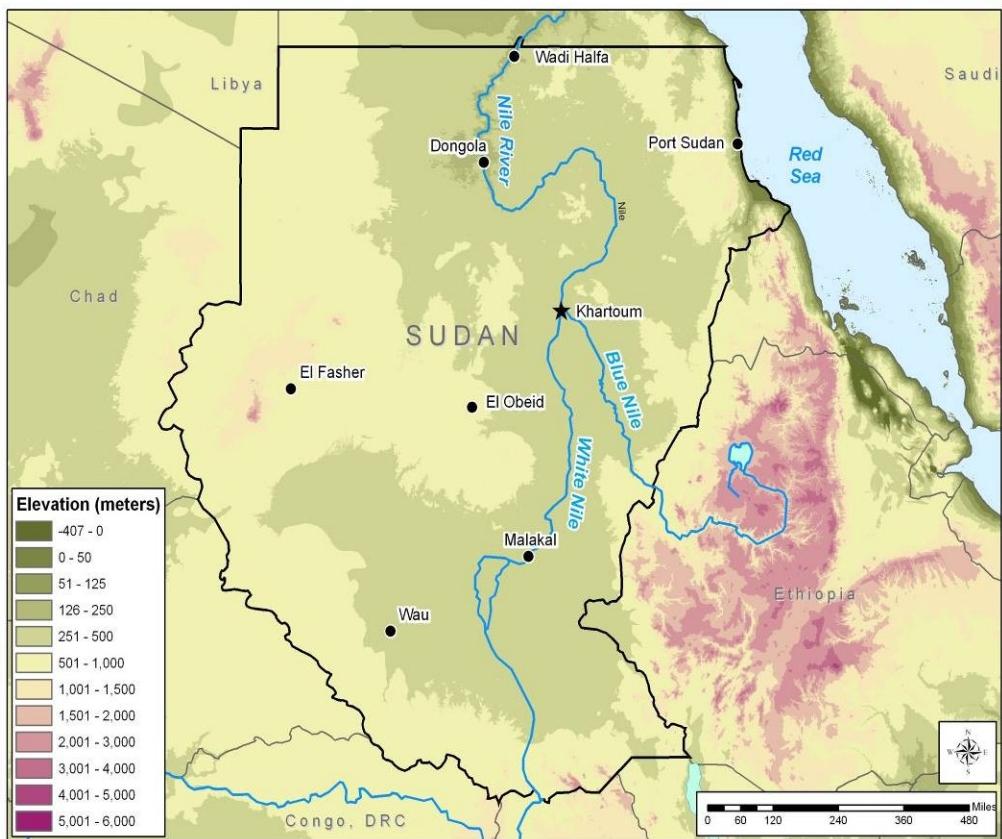


# Where in the world is Sudan?



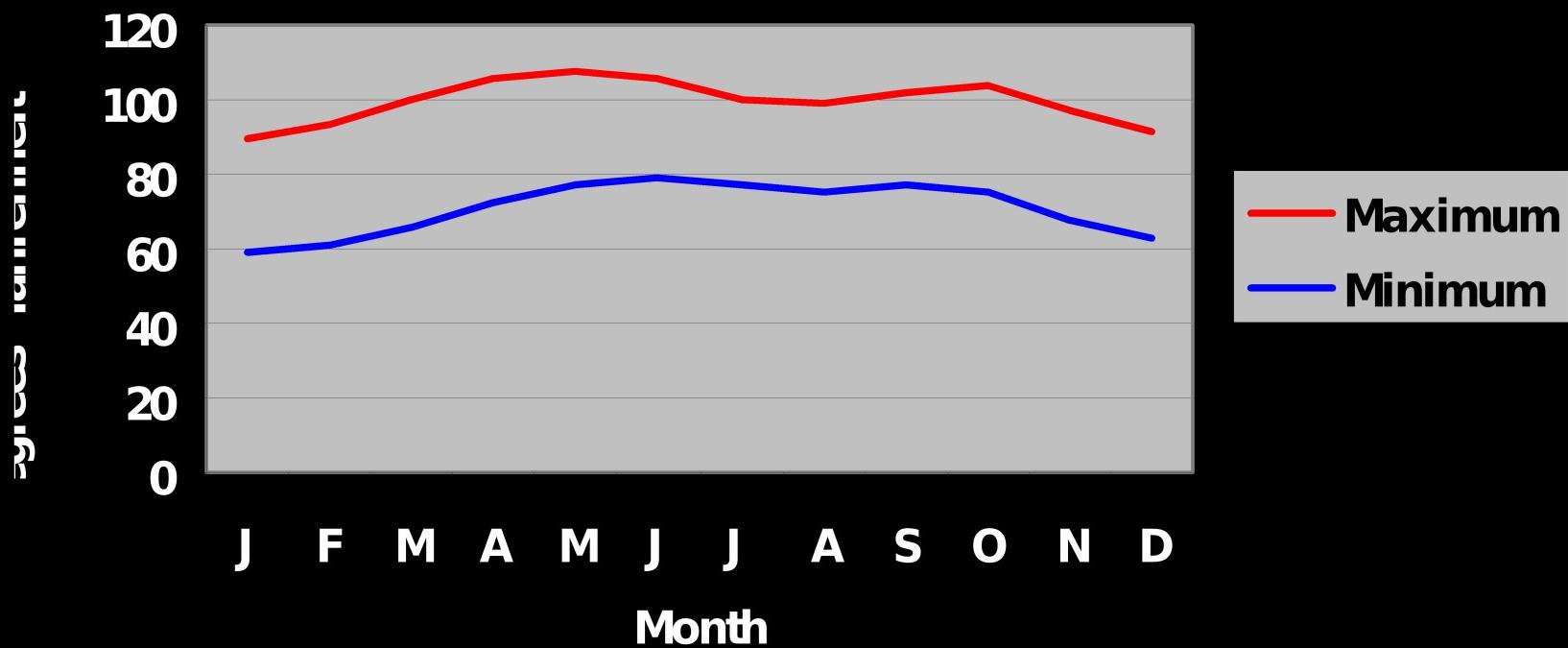
# Physical Environment

- Topography
  - Generally flat
  - Mountains in far south, northeast, & west
  - Desert dominates the north
- Climate
  - Tropical in south
  - Desert in north
  - Rainy season varies (Apr - Nov)



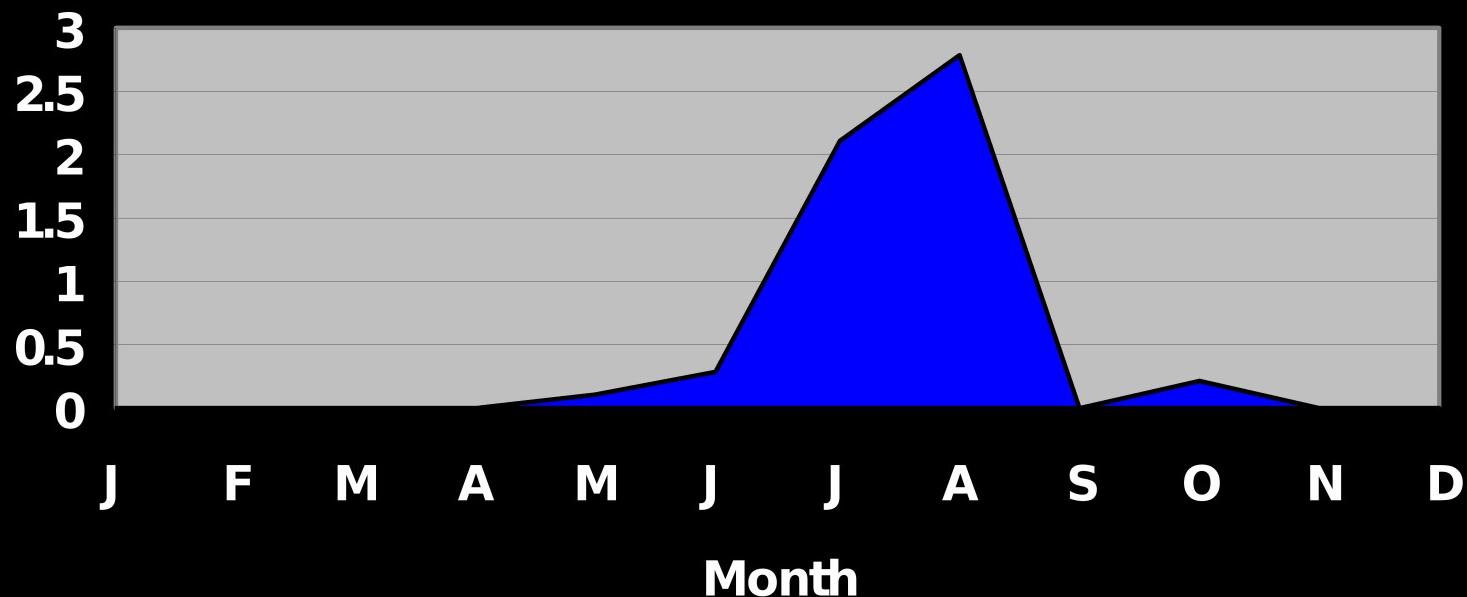
# Physical Environment

Average Max/Min Temperature at Khartoum



# Physical Environment

Average Total Precipitation in Khartoum



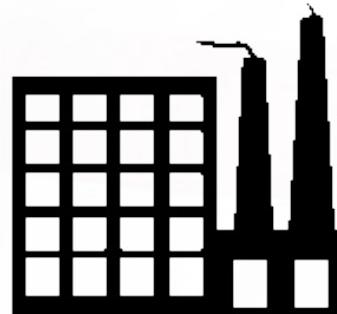
# Environmental Health Risks

- Greatest short-term
  - Ingestion of food or water contaminated with fecal pathogens.
  - Extreme heat, airborne, dust & sand, and high altitude
- Greatest long-term
  - Air contamination in industrial areas
  - Chemical contamination of food & water



# Environmental Health Risks

- Air Contamination
  - **LOW RISK** to human health
  - Localized - most significant around Khartoum



- Particulate matter may be high
- Has been an increase in respiratory diseases among locals living near industrial areas

# Environmental Health Risks

- Soil Contamination
  - **LOW RISK** to human health
  - Usually localized around industrial facilities
  - Pesticide stockpile leakage
  - Exposure to contaminants is unlikely in the absence of digging or windblown dust



# Infectious Disease Risk

- **VERY HIGH RISK** for infectious diseases
- Overall disease risk is among the worst in the world

# Infectious Diseases

- Foodborne and Waterborne Diseases
  - **HIGH RISK** = Diarrhea, Hepatitis A, Typhoid/paratyphoid, Hepatitis E
  - **INTERMEDIATE RISK** = Brucellosis, Cholera
- Force Health Protection (FHP) Priorities
  - Deploy appropriate PM personnel and equipment
  - Consume food, water, & ice only from US-approved sources
  - Operate food preparation facilities in accordance with Army doctrine
  - Ensure and enforce proper hand washing facilities near all latrines and dining facilities

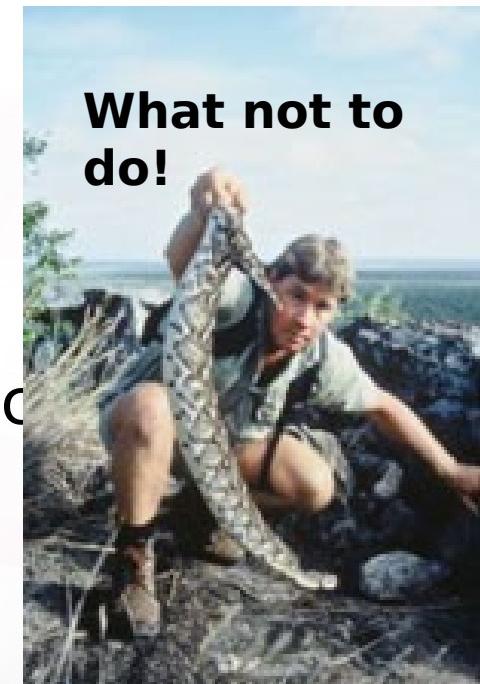
# Infectious Diseases Cont.

- Vector-borne Diseases
  - **HIGH RISK** = Malaria, Dengue fever, Trypanosomiasis
  - **INTERMEDIATE RISK** = Chikungunya, Crimean-Congo hemorrhagic fever, Leishmaniasis, Onyong-nyong, Rickettsioses, Rift Valley fever, Sand fly fever, Sindbis virus, Typhus, West Nile fever, Yellow fever
- FHP Priorities
  - Use DEET on all exposed skin
  - Treat field uniforms with permethrin
  - Use bed nets in field conditions, treat with permethrin
  - **Enforce malaria chemoprophylaxis as appropriate**



# Infectious Diseases Cont.

- Animal-contact Diseases
  - **INTERMEDIATE RISK** = Anthrax, Q-fever, Rabies
- FHP Priorities
  - Avoid animal contact
  - No mascots
  - Report all animal bites and scratches



# Infectious Diseases Cont.

- Sexually Transmitted Diseases
  - **HIGH RISK** = Hepatitis B
  - **INTERMEDIATE RISK** = gonorrhea/chlamydia, HIV/AIDS
- FHP Priorities
  - Avoid sexual contact
  - Use latex condoms if sexually active



# Infectious Diseases Cont.

- Water-contact Diseases
  - **HIGH RISK** = schistosomiasis
  - **INTERMEDIATE RISK** = leptospirosis
- FHP Priorities
  - avoid unnecessary contact with lakes, rivers, streams, and other surface water

**There will not be a sign like**

**WARNING!**

**LEPTOSPIROSIS  
HEALTH HAZARD**

FRESH WATER STREAMS AND MUD  
POSSIBLY POLLUTED WITH BACTERIA

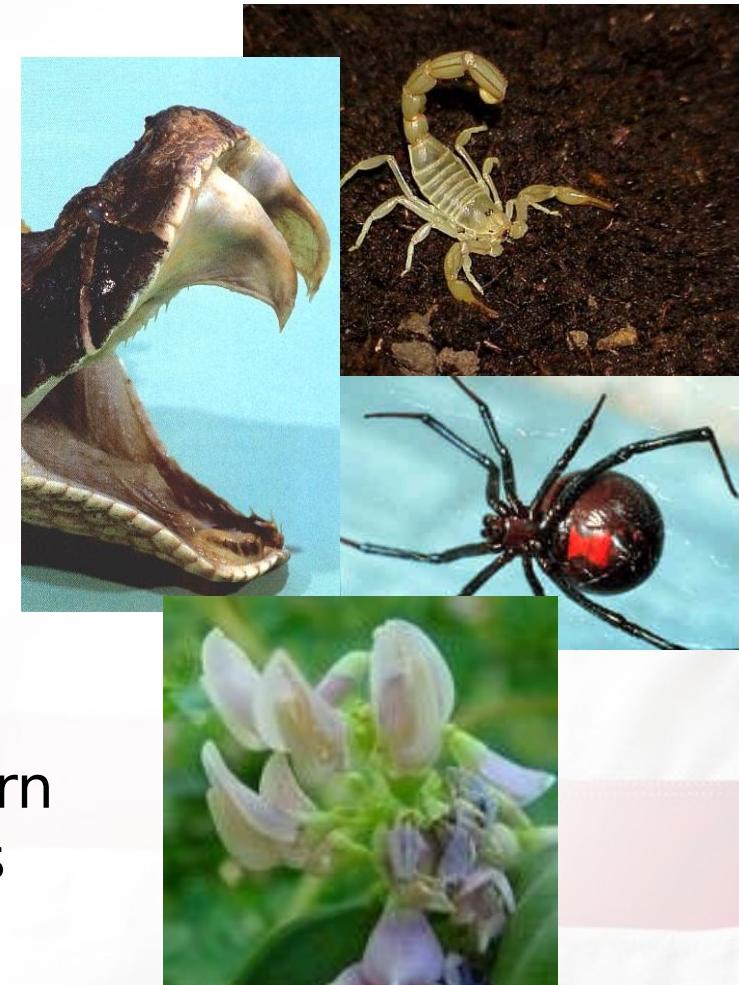
**SWIM, BOAT,  
OR HIKE AT YOUR OWN RISK**

# Infectious Diseases Cont.

- Respiratory Diseases
  - **HIGH RISK** = Meningococcal meningitis
  - **INTERMEDIATE RISK** = tuberculosis
- FHP Priorities
  - Tuberculin skin test before and after deployment (IAW Army Personnel Policy Guidance, Chapter 7)
  - Avoid overcrowding, 72sqft/person and head to toe sleeping arrangement
  - Avoid close contact with local population

# Hazardous Animals & Plants

- Animals
  - Snakes, scorpions, spiders
- Plants
  - May have thorns or toxic resin
- FHP Priorities
  - Do not handle animals
  - Shake out boots, clothing, & bedding
  - Do not touch, chew, eat, or burn unfamiliar plants



# SUMMARY

- Physical Environment
- Environmental Health Risks
- Infectious Diseases = **VERY HIGH RISK**
- Hazardous Animals and Plants
- FHP measures are simple and effective
  - Use and Enforce
  - Will conserve the fighting strength

